

Fabio Russo, Ph.D.

Contact Information

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Education

November 2004 - November 2007.

Ph.D. in Agrobiological and Agrochemistry "Interaction of recombinant and disease-associated prion proteins with organic and mineral soil colloids" Chairwoman Prof. Alessandra Accornero at University of Naples Federico II, Naples, Italy.

July 2003.

Degree in Environmental Sciences of the Sea, mark 110/110, University of Naples Parthenope, Naples, Italy. Thesis entitled "Interaction of abiotic catalyst with aromatic pollutants: effects on transformation and bioavailability" Chairwoman Prof. Alessandra Accornero.

Computer Skills

Strong knowledge of Windows 98/2000/Xp, MS Office 2003. Good knowledge of Adobe Photoshop.

Languages

Proficient in English and fluent in Italian

Work Experiences in Italy

May 2008 - October 2008.

Post-doctoral research fellowship:

Preparation of *Solanum tuberosum* samples, setup of protein extraction methods, evaluation of the total protein content and proteomic characterization.

Department of Soil, Plant, Environmental and Animal Productions Sciences, University of Naples Federico II, Naples, Italy.

November 2004 - February 2008.

Ph.D. :

Interactions of a recombinant and TSE disease associated prion protein with soil-like complexes.

Department of Soil, Plant, Environmental and Animal Productions Sciences, University of Naples Federico II, Naples, Italy.

January 2005 - October 2005.

Research fellowship:

Residence and diffusion of infectious agents of the TSE in the soil within the European project " Biotic and Abiotic Mechanisms of TSE Infectivity Retention and Dissemination in Soil"

Department of Soil, Plant, Environmental and Animal Productions Sciences, University of Naples Federico II, Naples, Italy.

January 2004 – January 2005.

Research fellowship:

Preparation and characterization of recPrP protein-phenolic polymers and phenolic complexes within the European project " Biotic and Abiotic Mechanisms of TSE Infectivity Retention and Dissemination in Soil".

Department of Soil, Plant, Environmental and Animal Productions Sciences, University of Naples Federico II, Naples, Italy.

**Work Experiences
in U.S.A. and
France**

January-September 2007.

Soil abiotic degradation of TSE associated Prion Protein - Prion Protein adsorption on Humic Acid coated Clays.

Department of Soil Science and Civil and Environmental Engineering, University of Wisconsin-Madison, Madison, WI, United States of America.

June 2005.

Conformational studies of a recombinant prion protein in soil like samples.

CNRS-Université PARIS VI, Laboratoire Dynamique Interaction et Réactivités, Groupe "Systèmes d'intérêt biologique" Thiais, France.

May 2005.

Immunodetection of low level of prion proteins in environmental samples.

INRA. Recherche Virologie et Immunologie Moléculaires. Jouy-en-Josas, France.

**Laboratory and
Instrument
Techniques**

Chromatography (TLC, HPLC); Spectroscopy (DRIFT, FT-IR, ATR, UV-Vis, Atomic Absorption, CD); Elemental Analysis (CHNS); organic pollutants extraction from soils, ultracentrifugation and ultrafiltration techniques; basic microbiology tools; protein determination by colorimetric assays, protein extraction and characterization by SDS-PAGE, Western Blot, Gel quantification by Densitometry, Basic tools with experimental animals.

**Contributions to
Research Projects**

- Contribution to an EU project, Quality of Life "Biotic and Abiotic Mechanisms of TSE Infectivity Retention and Dissemination in Soil (TSE-SOIL-FATE)" (2003-2005). Meeting shares and presentation of the developed work in Naples (5-6 February 2004), Braunschweig, Germany (4 February 2005), Firenze (29-30 September 2005).
- Contribution to a national project (PRIN 2005-2006) "Effect of organic carbon removal on adsorption of a recombinant prion protein on soil and soil model systems" (2006).

Publications

Russo F., Rao M.A., Gianfreda L. (2005). Bioavailability of phenanthrene in the presence of birnessite-mediated catechol polymers. *Applied Microbiology and Biotechnology* 68, 131-139.

Rao M. A., Russo F., Granata V., Berisio R., Zagari A. and Gianfreda L. (2007) Fate of prions in soil: interaction of a recombinant ovine prion protein with synthetic humic like-mineral complexes. *Soil Biology & Biochemistry* 39, 493-504.

Russo Fabio, Johnson Christopher J., Johnson Chad J., McKenzie Debbie, Aiken Judd M. and Pedersen Joel A. 2008 Pathogenic prion protein is degraded by a manganese oxide mineral found in soils. *Journal of General Virology* DOI 10.1099/vir.0.2008/003251-0

Rao M. A., Iamarino G., Scelza R. Russo F., Gianfreda L. (2008) Oxidative transformation of aqueous phenolic mixtures by birnessite-mediated catalysis. *Sci Total Environ.* doi:10.1016/j.scitotenv.2008.08.009

Iamarino G., Rao M. A., Russo F., Gianfreda L. (2004) Oxidative transformation of complex phenolic mixtures. *XXII International Conference On Polyphenols* Helsinki (Finland) 25-28 August 2004, p.777-778.

Russo, F., Rao M. A., Iamarino G., Gianfreda L. (2004) Phenanthrene biodegradation as affected by interaction with catechol and birnessite. *XXII International Conference On Polyphenols* Helsinki (Finland) 25-28 August 2004, p.801-802.

Pizzigallo M.D.R, Napola A., M.A. Rao, Russo F., Spagnuolo M. (2004) Catalitic role of birnessite in solid/solid and solid/liquid pollutant mixture. *Eurosoil 2004* Freiburg (Germany) 4-12 September, p.375.

Rao M. A., Russo F., Nocerino G., Gianfreda L. (2004) Interactions of proteins with catechol polymers: the case of prion proteins. *Eurosoil 2004* Freiburg (Germany) 4-12 September, p.340-341.

Rao M.A., Russo F., Iamarino G., Gianfreda L. (2004) Immobilizzazione della PrP in polimeri umo-simili. XXII Convegno Società Italiana di Chimica Agraria. Perugia, 21-24 Settembre 2004, p.130.

Rao M.A., Russo F., Ricciardella M., Violante A., Gianfreda L. (2004) Interactions of prion protein with organo and organo-mineral complexes. Poster al Fourth International Symposium of the Working Group MO Interactions of Soil Minerals with Organic Components and Microorganisms. Whuhan, Cina, September 20-23, 2004.

Rao M.A., Russo F., Iamarino G., Gianfreda L. (2004). Immobilizzazione della PrP in polimeri umo-simili. Comunicazione al XXII Convegno Società Italiana di Chimica Agraria. Perugia, 21-24 Settembre 2004.

Iamarino G., Scelza R., Russo F., Rao M.A., Gianfreda L. (2005) Interactions of organic pollutants with soil biological activities. Poster alla International Conference on Environmental, Industrial and Applied Microbiology. March 15-18, 2005, Badajoz (Spain).

Scelza R., Iamarino G., Russo F., Rao, M.A., Gianfreda, L. (2005) Soil biochemical properties as affected by short- and long-term organic pollution. Poster alla General Assembly of the European Geosciences Union, 24-29 Aprile, Vienna (Austria).

Iamarino G., Scelza R., Russo F., Rao M. A., Gianfreda L. Detossificazione di acque inquinate da fenoli. Poster al XXIII Convegno Società Italiana di Chimica Agraria. Torino, 20-23 Settembre 2005.

Scelza R., Iamarino G., Russo F., Rao M.A., Gianfreda L. Effetti a breve ed a lungo termine di inquinanti organici sulle proprietà biochimiche di un suolo. Poster al XXIII Convegno Società Italiana di Chimica Agraria. Torino, 20-23 Settembre 2005.

Russo F., Rao M.A., Scelza R., Iamarino G., Gianfreda L. (2005) Biodegradazione del fenantrene in sistemi modello organo-minerali. Poster al XXIII Convegno Società Italiana di Chimica Agraria. Torino, 20-23 Settembre 2005.

Russo F., Scelza R., Iamarino G., Rao M. A., Gianfreda L. Phenanthrene biodegradation in model and real systems. Poster at 13th International Biodeterioration and Biodegradation Symposium 4-9 September 2005 Madrid (Spain), p. 205.

Iamarino G., Scelza R., Rao M. A., Russo F., Gianfreda L. Bioremediation of phenol polluted waters. Poster at 13th International Biodeterioration and Biodegradation Symposium 4-9 September 2005 Madrid (Spain), p.237.

Rao M.A., Russo F., Ricciardella M., Violante A. and Gianfreda L. Fate of prion protein in soil: interaction with organo and organo-mineral complexes. Poster al TSE Forum Prion 2005, October 19-21, Dusseldorf (Germany).

Iamarino G., Scelza R., Rao M. A., Russo F., Gianfreda L. Bioremediation of phenol polluted waters. Poster at 13th International Biodeterioration and Biodegradation Symposium 4-9 September 2005 Madrid (Spain), p.237.

Iamarino G., Scelza R., Rao M. A., Russo F., Gianfreda L. Bioremediation of phenol polluted waters. Poster at 13th International Biodeterioration and Biodegradation Symposium 4-9 September 2005 Madrid (Spain), p.237.

Rao M.A., Russo F., Ricciardella M., Violante A. and Gianfreda L. Fate of prion protein in soil: interaction with organo and organo-mineral complexes. Poster al TSE Forum Prion 2005, October 19-21, Dusseldorf (Germany).

Pucci A., Russo F., D'Acqui L., Rao M.A., Calamai L., Gianfreda L. Protection of recombinant Prion protein (recPrP) from oxidation by Low Temperature Ashing (LTA) resulting from its adsorption and/or co-polymerized in synthetic humic-like complexes. Poster al TSE Forum Prion 2005, October 19-21, Dusseldorf (Germany).

Iamarino G. , Rao M.A. , R. Scelza, F. Russo, L. Gianfreda . Catalytic Performance of Oxidative Enzymes in the Transformation of Polluting Substances. *International Symposium on ENVIRONMENTAL BIOCATALYSIS*. Cordoba, Spain, April 23-26, 2006.

Rao M.A., Scelza R., Iamarino G., Russo F. Gianfreda L. Dynamics of chemical and biochemical soil properties in the presence of organic pollutants. World Congress of Soil Science, 9- 14, July 2006, Philadelphia, USA.

Rao M. A., Russo F., Gianfreda L. Organic colloids role in prion proteins retention World Congress of Soil Science, 9- 14, July 2006, Philadelphia, USA.

Rao M.A., Iamarino G., Scelza R., Russo F., Gianfreda L. Application of Oxidative Enzymes for the Detoxification of Xenobiotic Pollutants. Oxizymes 2006, 7-9, September 2006, Oeiras, Portogallo.

Rao M.A., Russo F., Conte P., Piccolo A., Gianfreda L.. Interactions between a prion protein and soil-like components as evidenced by cpmas 13C-nmr. 20-23 September 2006 Salerno, Italia.

Russo F., Rao M.A., Iamarino G., Scelza R., Gianfreda L.. Comparative efficiency of soil oxidative catalyst towards complex phenolic mixture. FISV-2006 8th Annual Meeting. 28 settembre / 1 ottobre 2006, Riva del Garda, Italia.

Russo F., Rao M.A., Gianfreda L. Comportamento di una proteina prionica in complessi umo e umo simili XXV Convegno Nazionale della Società di Chimica Agraria, Pisa 18-21 Settembre 2007.

Giosafatto C. V. L., Russo F., Rao M.A., Gianfreda L., Mariniello L. La proteina prionica come substrato dell'enzima transglutaminasi e suo destino nell'ambiente. Giornate scientifiche del polo delle scienze e delle tecnologie per la vita. 20-21 Settembre 2007.

Rao M.A., Russo F., Gianfreda L. Entrapment of prion protein in humic-like complexes by laccase catalysis. Third International Conference: enzymes in the environment, activity ecology application, Viterbo 15-19 Luglio 2007.

Rao M.A., Russo F., Gianfreda L. Intrinsic soil capability to resist prion dissemination. Fourth European Bioremediation Conference. 3-6 September Chania Crete.

Russo F., Rao M.A., Gianfreda L. Caratterizzazione proteomica di varietà di patate come strumento coadiuvante la tracciabilità bio-molecolare XXVI Convegno Nazionale della Società di Chimica Agraria. Palermo, 30 Settembre 3 Ottobre.

Russo F., Rao M.A., Gianfreda L. Interaction of recombinant and disease-associated prion proteins with organic and mineral soil colloids. (Oral presentation of Ph.D. Thesis) XXVI Convegno Nazionale della Società di Chimica Agraria. Palermo, 30 Settembre 3 Ottobre.

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10-11-2008